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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/810,738

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Louis C. Haddad

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04/02/2008

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EXAMINER

VENCI, DAVID J

ART UNIT

PAPER NUMBER

1641

NOTIFICATION DATE

DELIVERY MODE

04/02/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/810,738	<b>Applicant(s)</b> HADDAD ET AL.	
	<b>Examiner</b> DAVID J. VENCI	<b>Art Unit</b> 1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on January 4, 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10, 11 and 13-33 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 16-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11, 13, 15, 32 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-8, 10, 11 and 13-33 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/04/08</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 4, 2008, has been entered.

Claims 1-8, 10, 11 and 13-33 are pending. Claims 14 and 16-31 are direct to non-elected inventions and were withdrawn from consideration pursuant to 37 CFR 1.142(b) in prior Office Action dated April 9, 2007.

Claims 1-8, 10, 11, 13, 15, 32 and 33 are under examination.

### ***Election/Restrictions***

Examiner acknowledges Applicants' request to rejoin Invention II (*i.e.*, claim 14) and Invention III (*i.e.*, claim 16) upon indication of allowable subject matter (see Applicants' reply, p. 19, last two paragraphs). Examiner will reconsider Applicants' request upon indication of allowable subject matter.

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***Claim Rejections - 35 USC § 112 – first paragraph***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 24, 27 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Specifically, Examiner is unable to locate support for the amendment “x is at least [1]2” in the specification as originally filed. Applicants’ direction to p. 15, line 7 of the specification does not appear to support this amendment.

Applicants are required to cancel new matter in response to this Office Action.

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***Claim Rejections - 35 USC § 112 – second paragraph***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8, 10, 11, 13 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the phrase “the hydrophobic portion of the solid phase material” lacks antecedent basis.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 7, 8, 10, 11, 13, 15, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Arentzen *et al.* (US 5,491,083).

Arentzen *et al.* describe a method of reducing non-specific binding of target molecules to a surface (see e.g., col. 1, lines 63-66, observing prior art nonspecific binding; see *also*, col. 3, lines 48-50, distinguishing Applicants' "good retention"), the method comprising:

1. providing a sample comprising target molecules (see e.g., Abstract, last sentence, "for such applications as separation and immobilization of biomolecules such as enzymes, carrying out heterogeneous diagnostic assays, and preparation of biosensors");
2. providing a solid phase material (see col. 7, line 10, "fluorocarbon surface"; lines 10-11, "solid fluorocarbon polymer"; lines 12-13, "nonfluorocarbon support"; line 13, "fluorocarbon interlayer") comprising:
  - a. a surface that comprises a hydrophobic portion (see col. 7, line 22, "interlayer"; lines 24-25, "fluorocarbon surface"); and
  - b. capture sites (see col. 6, lines 48-61, "activated fluorocarbon support"; see *also*, col. 7, lines 24-25, "A sufficient amount of fluorocarbon surface[...] to secure the reagent")

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covalently or hydrophobically attached (see col. 6, lines 33-36, "attaching to"; lines 54-56, "adsorb onto"; see also, col. 7, lines 22-24, "applied[...] by chemical reactions") to the solid phase material;

3. providing a fluorinated nonionic surfactant comprising two or more fluorinated hydrophobic segments and one or more hydrophilic segments (see *e.g.*, col. 5, structure on lines ~38-44; see *also*, col. 6, lines 18-22, "The sugar can be[...] any polyhydroxy compound"; see *e.g.*, lines 62-65, "a poly(fluoroalkyl)sugar reagent with a poly(oxyethylene) group, *e.g.*, reagent 38, a neutral fluorosurfactant") (paraphrasing mine);
4. contacting the solid phase material with the fluorinated nonionic surfactant (see *e.g.*, col. 6, lines 62-65, "coimmobilized"; see also, col. 7, lines 7-9, "the support can be treated with the fluorosurfactant in a separate step either after or just preceding the immobilization step") to block at least a portion of the hydrophobic portion of the surface;
5. contacting the blocked solid phase material with the sample so that at least a portion of the target molecules of the sample adhere to the capture sites (see *e.g.*, Abstract, last sentence, "for such applications as separation and immobilization of biomolecules such as enzymes, carrying out heterogeneous diagnostic assays, and preparation of biosensors").

With respect to claim 2, Arentzen *et al.* describe a porous solid phase (see col. 26, lines 24-26, "packed into a[...] column") (paraphrasing mine).

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With respect to claims 4, 32 and 33, Arentzen *et al.* describe secondary blocking agents (see col. 6, line 65, "other proteins"; see col. 26, lines 11-13, "0.2% Zonyl® FSN fluorosurfactant"; line 21, "human immunoglobulin").

With respect to claims 7 and 8, Arentzen *et al.* describe removing 100% of an adhered target molecule (see col. 26, lines 20-23, "release of the hlgG at pH 3.0").

With respect to claim 10, Arentzen *et al.* describe providing a capture protein (see col. 6, lines 10-11) which is hydrophobically attached to a solid phase (see col. 6, lines 12-13).

With respect to claims 11 and 13, Arentzen *et al.* describe immobilizing receptor proteins (see col. 7, line 28, "enzyme").



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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arentzen *et al.* (US 5,491,083) in view of Hagen *et al.* (US 5,071,610).

Arentzen *et al.* describe non-stick methods as substantially described, *supra*, but do not provide the solid phase particularly recited in claim 3.

However, Hagen *et al.* describe how to make such solid phases (see Title) for use as chromatography media (see col. 1, lines 12-16).

It would have been obvious for persons of ordinary skill to practice Arentzen's method with Hagen's solid phase because Hagen *et al.* say their solid phase is "self-supporting" so they can be combined, stacked or layered in a controllable fashion in order to optimize chromatographic performance (see col. 12, lines 39-48) in column, planar or centrifugal formats (see col. 13, lines 19-29, 63-67).

***Response to Arguments***

*Claim Rejections - 35 USC § 112 – second paragraph*

In prior Office Action, claim 1 was rejected under 35 U.S.C. 112, second paragraph, because the phrase “the hydrophobic portion of the solid phase material” lacks antecedent basis.

In response, Applicants argue that both elements—i.e., the hydrophobic portion and the solid phase material—are expressly recited in step 2 of claim 1 (see Applicants' reply, p. 17, third paragraph).

Applicants' argument is not persuasive because step 2 of claim 1 recites “a *surface* that comprises a hydrophobic portion” (emphasis added). Thus, according to claim 1, the *surface* comprises the hydrophobic portion.

*Claim Rejections - 35 USC § 102*

In prior Office Action, claims 1, 2, 4, 9-13, 15, 32 and 33 were rejected under 35 U.S.C. 102(b) as being anticipated by Arentzen *et al.* (US 5,491,083).

In response, Applicants appear to argue that Arentzen *et al.* do not teach “covalently attached or hydrophobically attached” capture sites (see Applicants' reply, paragraph bridging pp. 18-19).

Applicants' argument is not persuasive because Arentzen *et al.* describe capture sites (see col. 6, lines 48-61, “activated fluorocarbon support”; see *also*, col. 7, lines 24-25, “A sufficient amount of fluorocarbon surface[...] to secure the reagent”) covalently or hydrophobically attached (see col. 6, lines 33-36, “attaching to”; lines 54-56, “adsorb onto”; see also, col. 7, lines 22-24, “applied[...] by chemical reactions”) to the solid phase material.

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***Conclusion***

Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Venci whose telephone number is 571-272-2879. The examiner can normally be reached on 08:00 - 16:30 (EST). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

David J Venci  
Assistant Examiner  
Art Unit 1641

/Long V Le/  
Supervisory Patent Examiner, Art Unit 1641